FIG.1

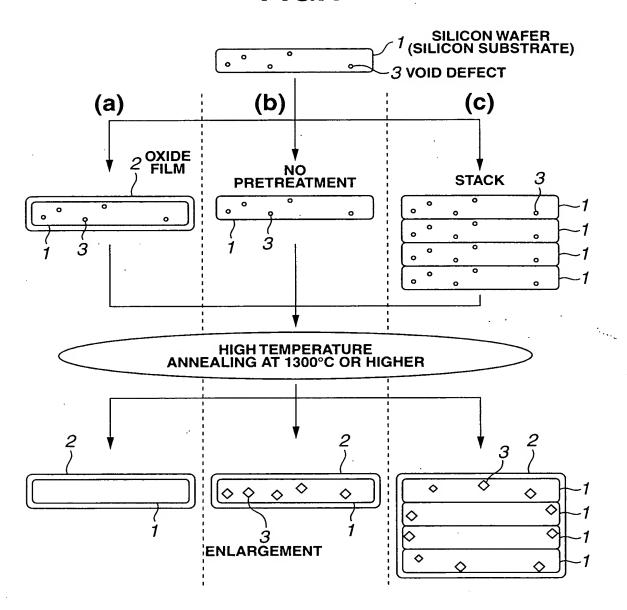


FIG.2

TREATMENT TEMPERATURE	OXYGE	N PARTIAL PRE IN ARGON GAS	SSURE
/TIME	0.5%	30%	100%
1300°C, 2 HOURS	×	×	
1350°C, 2 HOURS	×	×	×
1390°C, 2 HOURS	. ×	×	×

X: ENLARGEMENT

△: SHRINKAGE

○: DISAPPEARANCE

FIG.3

TREATMENT TEMPERATURE	OXYGE	N PARTIAL PRE IN ARGON GAS	SSURE
/TIME	0.5%	30%	100%
1300°C, 2 HOURS	0 .		Δ
1350°C, 2 HOURS	0	0	0
1390°C, 2 HOURS	0	0	0

X: ENLARGEMENT

△: SHRINKAGE

○: DISAPPEARANCE

FIG.4

TREATMENT			INITIA	INITIAL OXIDE FILM THICKNESS (nm)	MTHICKNESS	(mm)	
TEMPERATURE AIMOSPHERE	AIMOSPHERE	*0	45 nm	175 nm	396 nm	500 nm	700 nm
1350°C, 2 HOURS	0.5% O2/Ar	×	×	×	◁	0	0
1350°C, 2 HOURS	30% O2/Ar	×	×	×	×	0	0
1350°C, 2 HOURS	100% O2	×	×	×	×	0	0

*: NATURAL OXIDE FILM

X: ENLARGEMENT

△: SHRINKAGE ○: DISAPPEARANCE

FIG.5

OXIDE FILM THICKNESS	OXIDE FILM FORMATION METHOD	VOID DEFECTS
440	CVD	Δ
720	CVD	Δ
55	DRY OXIDATION	×
164	DRY OXIDATION	· ×
274	DRY OXIDATION	×
400	DRY OXIDATION	0
840	DRY OXIDATION	0
75	WET OXIDATION	×
159	WET OXIDATION	×
377	WET OXIDATION	×
720	WET OXIDATION	0

X: ENLARGEMENT

△: SHRINKAGE

○: DISAPPEARANCE

FIG.6

TREATMENT	OXYGE	N PARTIAL PRESSURE
TEMPERATURE /TIME	VOID DEFECTS	
1200°C, 2 HOURS	NO CHANGE	
1240°C, 2 HOURS	0	
1260°C, 2 HOURS	0	
1280°C, 2 HOURS	0	
1300°C, 2 HOURS	0	
1310°C, 2 HOURS	×	
1320°C, 2 HOURS	×	
1350°C, 2 HOURS	×	
1390°C, 2 HOURS	×	

X: ENLARGEMENT

△: SHRINKAGE

○: DISAPPEARANCE

FIG.7

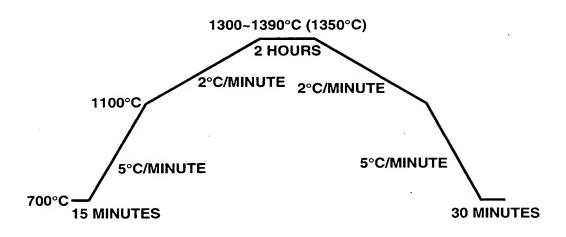


FIG.8

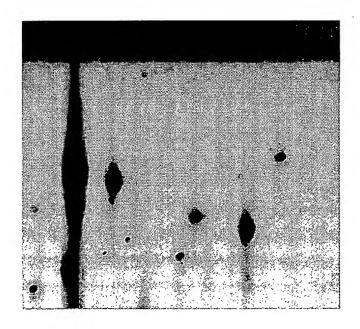
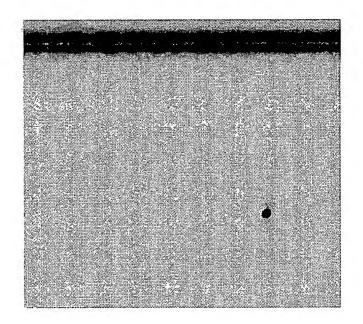
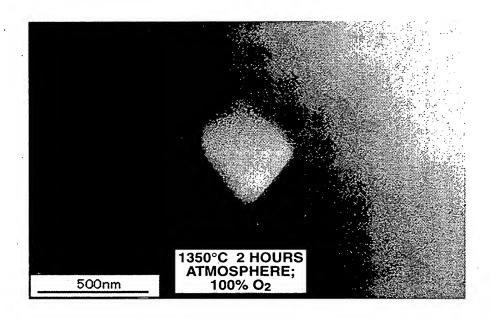


FIG.9



BEST AVAILABLE COPY

FIG.10



REST AVAILARIE COPY

FIG.11

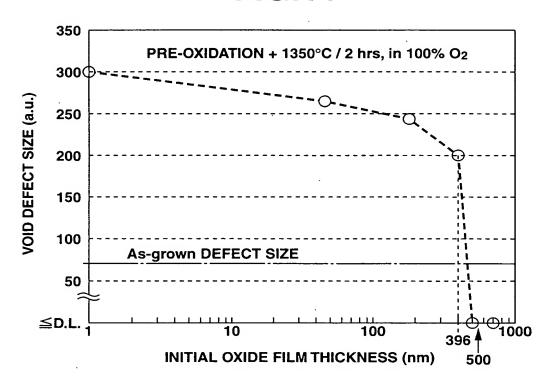


FIG.12

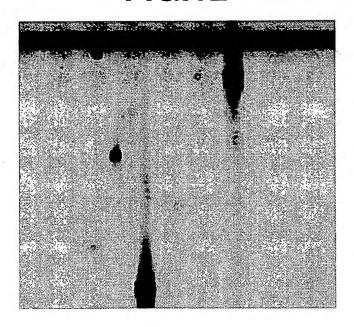


FIG.13

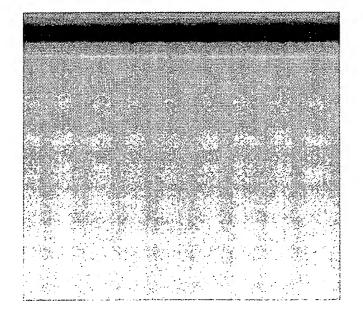


FIG.14

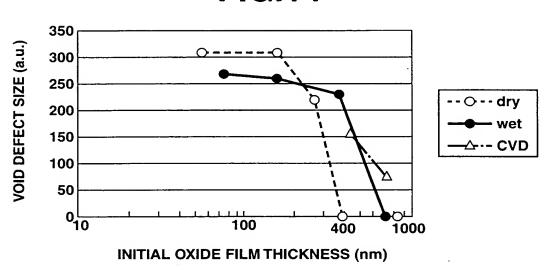


FIG.15

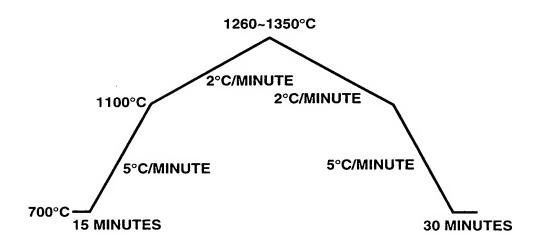


FIG.16

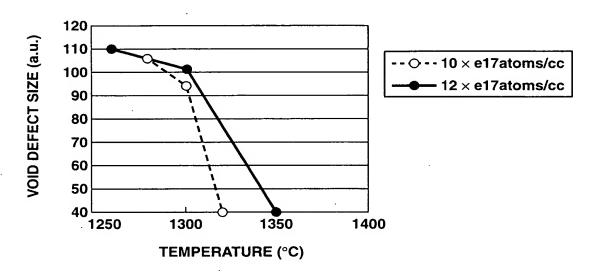


FIG.17

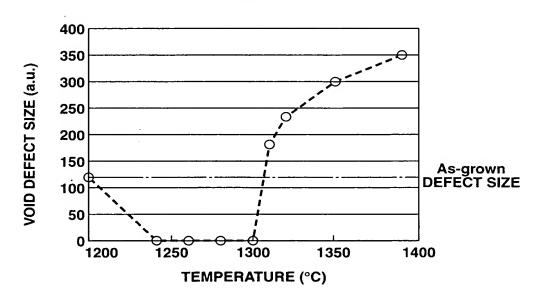


FIG.18

	INIT	IAL OXYGEN	CONCENTRAT	ΓΙΟΝ
TEMPERATURE	10e17 (a	toms/cc)	15e17 (a	toms/cc)
TEMPERATURE	ATMOS DURING	PHERE HEATING	ATMOS DURING	PHERE HEATING
	0.5%	100%	0.5%	100%
1200°C	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
1210°C	Δ	Δ	NO CHANGE	NO CHANGE
1220°C	Δ	Δ	NO CHANGE	NO CHANGE
1230°C	Δ	0	NO CHANGE	NO CHANGE
1240°C	0	0	NO CHANGE	NO CHANGE
1260°C	0	0	NO CHANGE	NO CHANGE
1280°C	0	0	NO CHANGE	NO CHANGE
1300°C	0	0	×	Δ
1310°C	×	0	×	0
1320°C	×	0	×	0
1330°C	×	0	×	0
1340°C	×	0	×	0
1350°C	×	0	×	0

X: ENLARGEMENT

△: SHRINKAGE

○: DISAPPEARANCE

FIG. 19

	OXA	GEN ATMO	SPHERE D	URING HE	OXYGEN ATMOSPHERE DURING HEAT TREATMENT (INCLUDING HEATING)	ENT (INCLI	JDING HEA	(TING)
TEMPERATURE	INITIAL	INITIAL OXYGEN CONCENTRATION: 10e17 atoms/cc	YGEN CONCENTR 10e17 atoms/cc	ATION:	INITIAL	INITIAL OXYGEN CONCENTRATION: 15e17 atoms/cc	YGEN CONCENTR 15e17 atoms/cc	ATION:
	25%	%09	%5/	100%	72%	·%0 <u>\$</u>	%52	4001
1260°C	0	0	0	0	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
1280°C	0	0	0	0	NO CHANGE	NO CHANGE	NO CHANGE	NO CHANGE
1300°C	0	0	0	0	NO CHANGE	abla	abla	◁
1320°C	0	0	0	0	×	◁	abla	0
1340°C	0	0	0	0	×		abla	0
1350°C		0	0	0	×	◁	◁	0

FIG.20

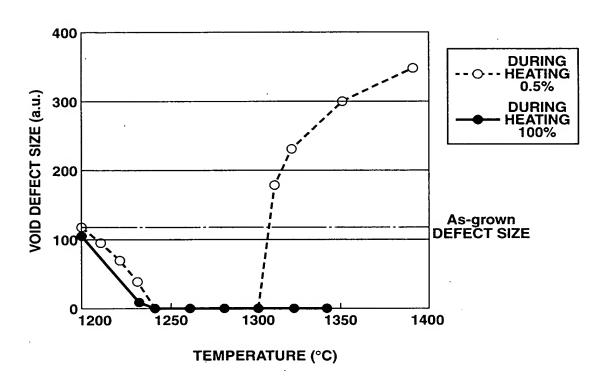


FIG.21

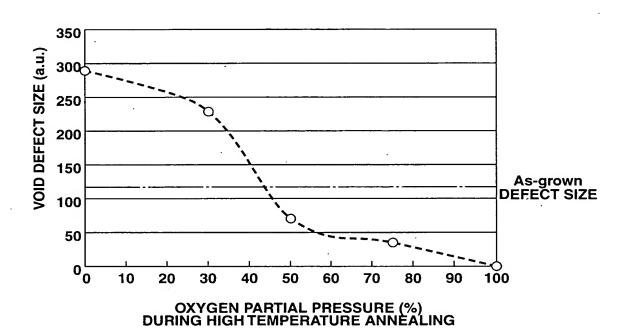


FIG.22

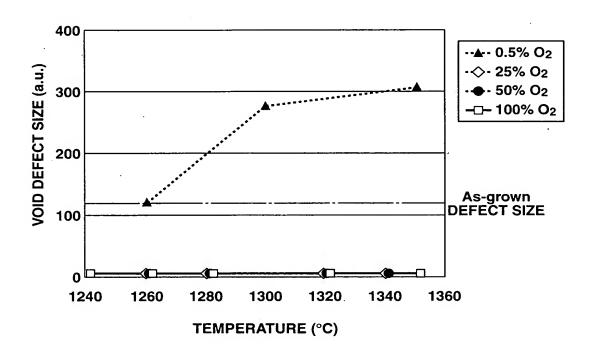


FIG.23

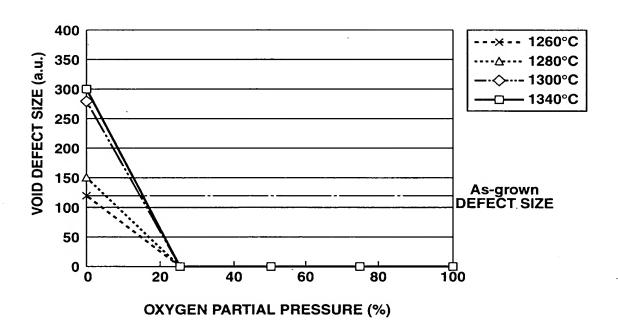


FIG.24

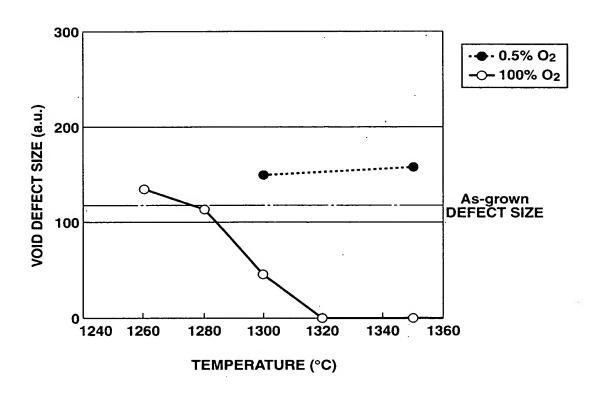


FIG.25

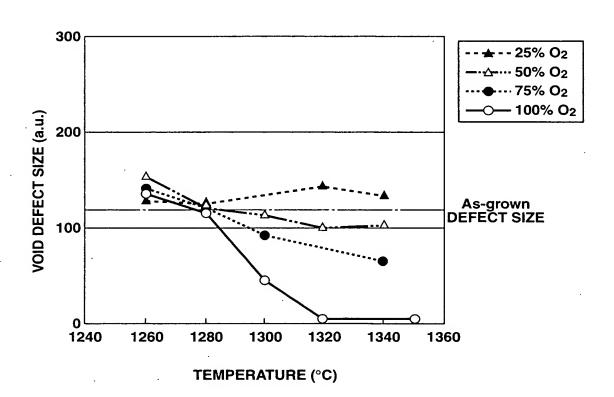


FIG.26

